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(54) **DOSING TOOL**

(57) A manual coffee dose adjustment device (110) includes a holder having a blade (133) extending from it, and a height adjustment frame (126) having portafilter contacting surfaces that is adjustably retained by a holder.

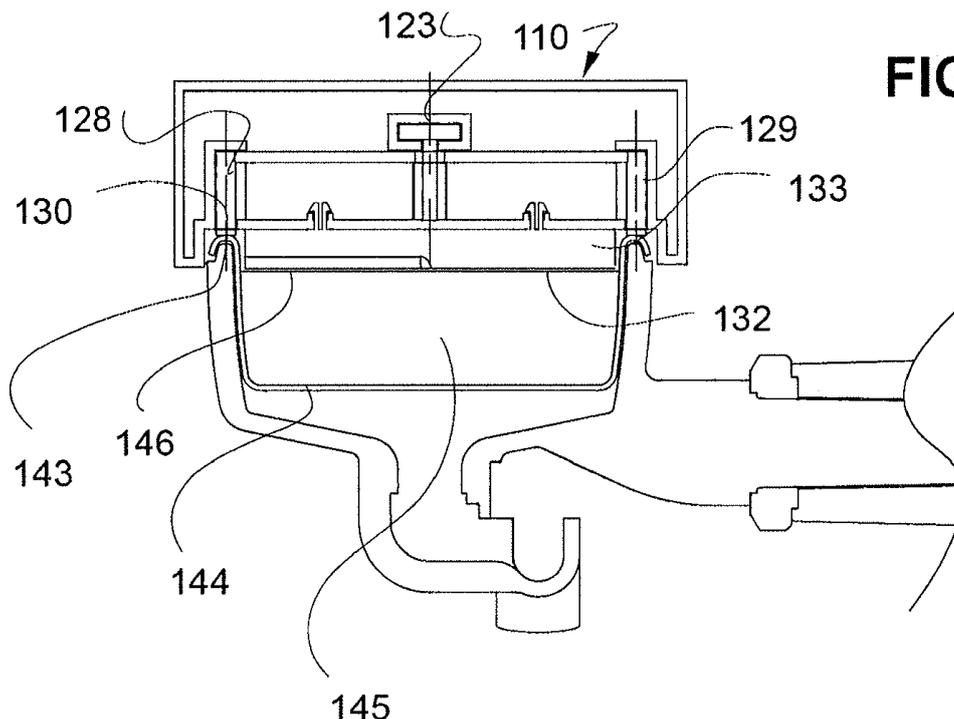


FIG.13

Description

Field of the Invention

[0001] The invention relates to coffee dosing tools and more particularly to a portafilter dosing tool with interchangeable or adjustable blades.

Background of the Invention

[0002] Espresso machines use a portafilter or portafilter with an interchangeable basket for the purpose of containing ground coffee during an extraction process. The internal diameter of the portafilter in conjunction with the depth and density of the ground coffee in the portafilter determines the dose or mass contained in the portafilter. Ground coffee is tamped into the portafilter to arrive at a preferred depth or fill height. The fill height is an important parameter in the preparation of an espresso. Because of the importance of the fill height, a dosing tool is required that allows the user to accurately and repeatedly finish or trim a tamped portafilter to the appropriate fill height.

Objects and Summary of the Technology

[0003] It is an object of the technology to provide a portafilter dosing tool with an adjustable or interchangeable blade.

[0004] It is another object of the technology to provide a portafilter dosing tool having a fill height indicator.

[0005] It is yet another object of the invention to provide a portafilter dosing tool having two blades, one of which is interchangeable with a third blade.

[0006] It is a further object of the invention to provide a portafilter dosing tool having an adjustable blade, an indexing feature with tactile feedback and a fill height indicator.

[0007] Accordingly, there is provided a portafilter dosing tool having a case within which is contained one, or a pair of blades. The case has a window through which an indexing mark can be viewed, the indexing mark being related to the desired fill height of a portafilter.

Brief Description of the Drawing Figures

[0008] In order that the invention be better understood, reference is now made to the following drawing figures in which:

Figure 1 is a perspective view of a dosing tool.

Figure 2 is an exploded perspective view of a dosing tool depicted in Figure 1.

Figure 3 is a perspective view of a dosing tool with one case half removed.

Figure 4 is a perspective view of a dosing tool with one case half removed.

Figure 5 is a perspective view of the dosing tool with

one blade removed.

Figure 6 is a perspective view of a dosing tool and a view window.

Figure 7 is a perspective view of a dosing tool and a view window.

Figure 8 is a perspective view of a dosing tool and a view window.

Figure 9 is a cross-sectional view of a dosing tool and portafilter.

Figure 10 is a cross-sectional view of a dosing tool and portafilter.

Figure 11 is a perspective view of an adjustable dosing tool.

Figure 12 is a perspective view of the device depicted in Figure 11 with one case half removed to expose the interior.

Figure 13 is a cross-sectional view of the tool shown in Figure 11 together with a portafilter.

Best Mode and Other Embodiments

[0009] As shown in Figures 1 and 2, a manual dosing or dose adjustment tool for a portafilter 10 comprises a two part case 11 within which are located a pair of opposing blades 12, 13. In this example, the case or holder is composed of two similar case halves 14, 15. The case halves, when joined, form a slot 100, 101 at each end through which each of the opposing blades can protrude. The case halves snap together or are adhered to one another as suggested in Figure 1. A two part case or holder is not essential. The transverse width 16 of the case is wider than the transverse width 17 of either of the blades 12, 13. Thus, when a blade is inserted into an open mouth of a portafilter, the end surfaces 18, 19 of the case will come to rest on the upper edges of the portafilter and the adjacent blade (e.g. 12) will penetrate into the portafilter by a penetration or depth that can be adjusted, as will be explained. In the examples provided, each blade comprises a trimming or scraping edge 21 that is preferably subdivided to provide one bevelled edged that is contiguous with one surface of the blade and a second bevelled edge 23 that is contiguous with the other face 24 of the blade. The bevel provides an optimised smoothing or scraping surface as the tool 10 is supported by the portafilter and manually rotated with respect to the portafilter.

[0010] As suggested by the example of Figure 2, each of the oppositely directed or opposing blades is preferably flat and incorporates oppositely bevelled half-edges as previously described. The width of a particular blade edge 21 corresponds to a portafilter of a particular and cooperating nominal internal diameter. Each blade has a pair of parallel limbs 24, 25, 26, 27 that extend away from the scraping edge 21. One blade has a central stem 28 that carries threads 29 that cooperate with female threads 30 located within an indexing wheel 31. The indexing wheel 31 preferably features a fluted, textured or scalloped exterior diameter 32 that cooperates with a

pawl 33. Each of the case halves 14, 15 has a central window 34, 35 with an optional internally thickened rim through which the indexing wheel 31 can be accessed and rotated by the user. The indexing pawl 33 is retained between the case halves 14, 15. As will be explained, rotation of the indexing wheel 31 causes the pair of blades to move in unison and in the same direction. The extent of movement can be viewed through a window 36 formed through at least one of the case halves 14. Raised or other optional index marks 37, 38 adjacent to the window 36 allow the user to view a mark, seam or joint between the attached blades and thereby gauge the depth of penetration of the exposed blade.

[0011] Figure 3 illustrates the dosing tool 10 with one of the case halves 14 removed. The two blades are removably interlocked, thus stabilising their relative orientation within the case. In the example of Figure 3, the lower blade 30 has one limb 31 having at its extremity, on one side a recess 32a. The recess 32a accommodates a tongue 33 formed at the extremity of a limb 34 of the other blade 35. A similar arrangement optionally interconnects the other limbs 36, 37. In this example, the recess and tongue arrangement 32, 33 is provided on each limb pair, but on opposing side faces of each blade. In this example, the terminal end of each limb 31, 36 of the lower blade 30 features a pair of laterally extending ears or tabs 37, 38. The ears protrude so that the lower blade cannot pass through the slot or opening in the tool body for the lower blade. The case half features upper and lower half slots 39, 40 through which each blade is adapted to protrude.

[0012] As suggested by the example of Figure 4, advancement of the upper blade 40 by the indexing wheel 41 eventually causes the disengagement of an enlarged head 42 formed at one end of the stem 43 with the resilient retaining clamp 44 that is integral with one of the case halves. The clamp 44 is formed from two resilient fingers 45, each having terminal protrusion that engage and disengage with the groove 51 (see Figure 5) located adjacent to the head 42. When the head 42 is ejected from the clamp 44, the upper blade 40 can be manually withdrawn from the case. This allows the same or a different blade to be reinserted into engagement with the indexing wheel 41. Portafilters are known to have different internal or mouth diameters. Thus by using two blades of different length, and providing for interchangeable blades, many different portafilters may be accommodated.

[0013] As suggested by Figures 2 and 5, the two reciprocating and opposite facing blades define a joint or edge 60 that is visible through the window 36, 52. Accordingly, and as illustrated in Figure 6, the joint or edge 60 will appear centred in the window 61 when the pair of blades is centred. Rotating the indexing wheel 62 in one direction 63 causes an advancement 64 of one of the blades 65. As the blade is advanced or retracted by the index wheel, the joint or edge 60 will appear to move whereupon the user can cease rotation of the index wheel when the joint or edge 60 is adjacent an appropriate index

mark 71 (as shown in Figure 7).

[0014] As suggested by Figures 6- 8, rotation of the indexing wheel 62 in an opposite direction will cause advancement of the other blade 81 and a corresponding movement of the joint or edge 60 into alignment with one of the index marks 82 of the other group or set 83 of index marks that appear adjacent to the window 61. Each of the index marks correspond to a depth of penetration of the blade past the upper rim of the portafilter. In order to facilitate more positive feel or location of the case with respect to the portafilter, the case may contain magnets 84, 85 adjacent to the shoulders 18, 19 formed by the case near the terminal end of each of the blade slots. In preferred embodiments, the spacing of the scallops or parallel grooves or indexing features 86 of the index wheel correspond to an advancement of a blade by a distance that corresponds to a spacing between adjacent index marks 82, or a rational subdivision thereof, such as one quarter or one half.

[0015] As shown in Figure 9, a dosing tool 90 as previously described can incorporate blades 91 having a blade width that is less than the internal diameter of the portafilter or its basket 92. When the width of the blade is less than the internal diameter of the portafilter or its basket 92, it is sometimes preferred to incorporate a rim engaging slot 93 into the tool 90. The rim engaging slot 93 ensures the correct position of the tool and its blade as it is rotated with respect to the portafilter. To facilitate even better engagement, one or more magnets 94, 95 may be incorporated into the tool in, or near, or in place of the slot. Magnetic attraction between the one or more magnets 94, 95 keeps the tool in engagement with the upper rim of the portafilter or its basket 92. In this example, one magnet 94 is located within the rim engaging slot 93 and the other magnet 94 is located a distance apart from the first magnet 94 that corresponds to the diameter of the upper rim of the portafilter or its basket 92. As shown in Figure 10, rotation of the tool 90 smooths the upper surface 110 of the coffee within the portafilter, the rim engaging slot 93 maintaining its engagement with the rim of the portafilter. The total width of a blade 91 is considered effective so long as it is at least one half the diameter of the portafilter or its basket 92.

[0016] Another embodiment of an adjustable dosing tool is illustrated in Figures 11-13. In this example, the adjustable manual dosing tool 110 comprises an enclosure 111 formed from two mating case halves 112, 113. A single case half or holder also support all of the moving parts. As shown in Figure 12, each case half has a peripheral rim 121, that when joined to one another they form an interior compartment 122. The holder or the two halves of it 112, 113 retain a freely rotating adjustment screw 122. In this example, the adjustment screw 122 comprises a rotating head 123 and a threaded shaft 124 that are retained by the holder. The threaded shaft 124 passes through and engages with cooperating threads formed on a central boss 125 of a reciprocating height adjustment frame 126. The adjustment frame 126

has a horizontal cross bar 127 that interconnects a pair of adjustment posts 128, 129 and that moves within the case. The lower or contact end of each adjustment post (being the lowest terminal points of the frame 126) 128, 129 may terminate in, for example, a low friction material or a magnetic material 130. When the thumb screw 123 is rotated, the horizontal crossbar 126 moves vertically together with the adjustment posts 128, 129. This has the effect of altering the vertical distance between the portafilter contacting surface 130 and the lower edge 132 of the scraper blade 133.

[0017] A lower end of the adjustment shaft 124, may be rotatably retained by an opening in a lower horizontal rim of a case halve 135.

[0018] Internal ribs, fillets or rims 136 of a case halve are used to guide the vertically adjustable cylindrical posts 128, 129 within the case.

[0019] A lower margin of a case halve may have one or more optional openings 137 for receiving one or more fasteners 138 that are carried by an upper edge of the scraper blade 133. In this way the scraper blade, 133 can be disengaged from the case and interchanged with a scraper blade 133 having different characteristics, a different width etc. The blade may be integral with the holder or removable. In this way the blade extends away from the holder.

[0020] Shown in Figure 13, the portafilter contacting ends or surfaces 130, being the lower ends of the adjustment post 128, 129 make contact with the upper rim 143 of a portafilter or a portafilter insert 144. When the tool 110 is rotated, the level of the coffee 145 in the portafilter is adjusted and the upper surface of the coffee 146 is flattened and smoothed by the tool.

[0021] Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

[0022] As used herein, unless otherwise specified the use of the ordinal adjectives "first", "second", "third", etc., to describe a common object, merely indicate that different instances of like objects are being referred to, and are not intended to imply that the objects so described must be in a given sequence, either temporally, spatially, in ranking, or in any other manner.

[0023] Reference throughout this specification to "one embodiment" or "an embodiment" or "example" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases "in one embodiment" or "in an example" in various places throughout this specification are not necessarily all referring to the same embodiment or example, but may. Furthermore, the particular features, structures or characteristics may be combined in any suitable manner, as would be apparent to one of ordinary skill in the art from this disclosure, in one or more embodiments.

[0024] Similarly it should be appreciated that in the

above description of exemplary embodiments of the invention, various features of the invention are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of one or more of the various inventive aspects. This method of disclosure, however, is not to be interpreted as reflecting an intention that the claimed invention requires more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed embodiment. Any claims following the Detailed Description are hereby expressly incorporated into this Detailed Description, with each claim standing on its own as a separate embodiment of this invention.

[0025] Unless specifically stated otherwise, as apparent from the following discussions, it is appreciated that throughout the specification discussions utilizing terms such as "processing," "computing," "calculating," "determining" or the like, refer to the action and/or processes of a microprocessor, controller or computing system, or similar electronic computing or signal processing device, that manipulates and/or transforms data.

[0026] Furthermore, while some embodiments described herein include some but not other features included in other embodiments, combinations of features of different embodiments are meant to be within the scope of the invention, and form different embodiments, as would be understood by those in the art. For example, in the following claims, any of the claimed embodiments can be used in any combination.

A 1st embodiment provides a manual coffee dose adjustment device, comprising a holder for an adjustable first blade; the blade having a threaded portion; the threaded portion being received by a cooperating and rotating index wheel; the index wheel being retained by the holder.

A 2nd embodiment provides the device of the 1st embodiment, wherein the holder further comprises a view window through which blade portion can be seen.

A 3rd embodiment provides the device of either of the 1st or 2nd embodiment wherein the holder is a case that contains the first blade.

A 4th embodiment provides the device of the 4th embodiment, wherein the case has two halves.

A 5th embodiment provides the device of any one of the 1st-4th embodiments further comprising a second blade that interconnects with the first blade so that the first and second blades move in unison.

A 6th embodiment provides the device of any one of the 1st-5th embodiments, wherein the first blade has

two faces and two bevelled edges, one edge contiguous with one face and the other edge contiguous with the other face.

A 7th embodiment provides the device of the 2nd embodiment further comprising index mark adjacent to the window.

An 8th embodiment provides the device of any one of the 1st-7th embodiments, wherein the index wheel has a textured exterior and is associated with a pawl that cooperates with the exterior.

A 9th embodiment provides a manual coffee dose adjustment device comprising a height adjustment frame having portafilter contacting surfaces that is adjustably retained by a holder, the holder having a blade extending from it.

A 10th embodiment provides the device of the 9th embodiment, wherein the blade is removable from the holder.

An 11th embodiment provides the device of the 9th embodiment, wherein the blade is integral with the holder.

A 12th embodiment provides the device of the 11th embodiment, wherein the height adjustment frame is held by an adjustment screw that is retained by a rotating head that is retained by the holder.

A 13th embodiment provides the device of any one of the 9th-12th embodiments, wherein the adjustment frame having terminal contact points.

A 14th embodiment provides the device of the 13th embodiment, wherein the contact points are magnetic.

A 15th embodiment provides the device of any one of the 9th-14th embodiments, wherein the holder has a view window formed in it.

A 16th embodiment provides the device of any one of the 1st-8th embodiment, wherein the holder incorporates magnets from contacting a portafilter.

[0027] Thus, while there has been described what are believed to be the preferred embodiments of the invention, those skilled in the art will recognize that other and further modifications may be made thereto without departing from the spirit of the invention, and it is intended to claim all such changes and modifications as fall within the scope of the invention.

[0028] While the present invention has been disclosed with reference to particular details of construction, these should be understood as having been provided by way

of example and not as limitations to the scope or spirit of the invention.

5 Claims

1. A manual coffee dose adjustment device (110) comprising:

a holder having a blade (133) extending from it; **characterized by** a height adjustment frame (126) having portafilter contacting surfaces that is adjustably retained by a holder.

2. The device of claim 1, wherein: either the blade (133) is removable from the holder or the blade (133) is integral with the holder.

3. The device of claim 2, wherein the blade (133) is integral with the holder and: the height adjustment frame (126) is held by an adjustment screw (122) that is retained by a rotating head (123) that is retained by the holder.

4. The device of any one of claims 1-3, wherein: the adjustment frame (126) has terminal contact points (128, 129).

5. The device of claim 4, wherein: the contact points (128, 129) are magnetic.

6. The device of any one of claims 1-5, wherein: the holder has a view window formed in it.

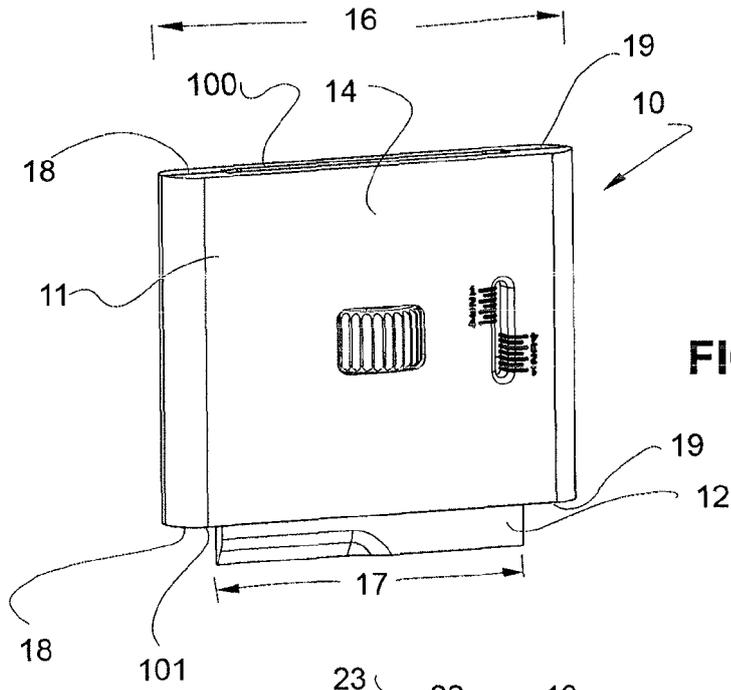


FIG. 1

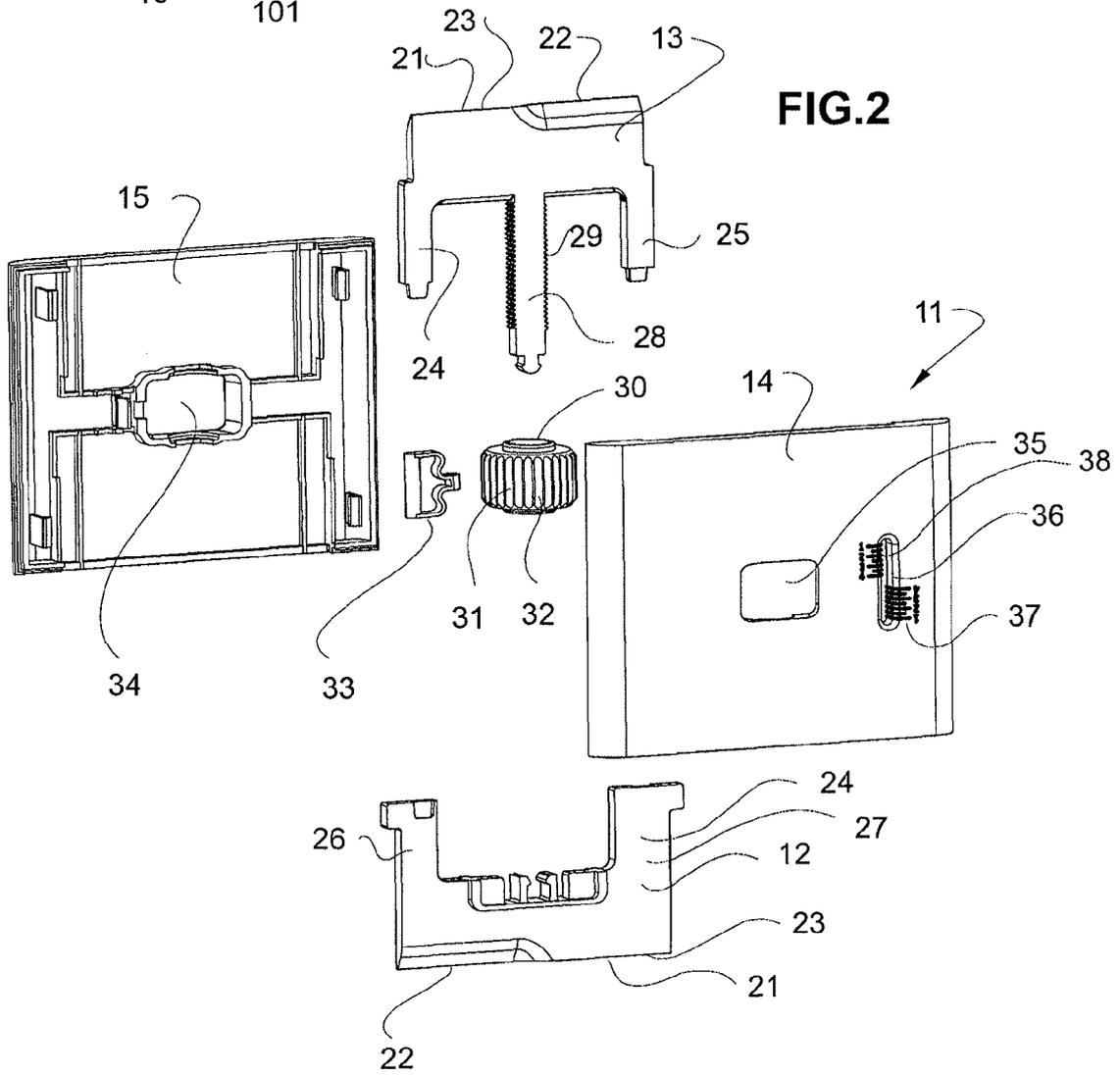
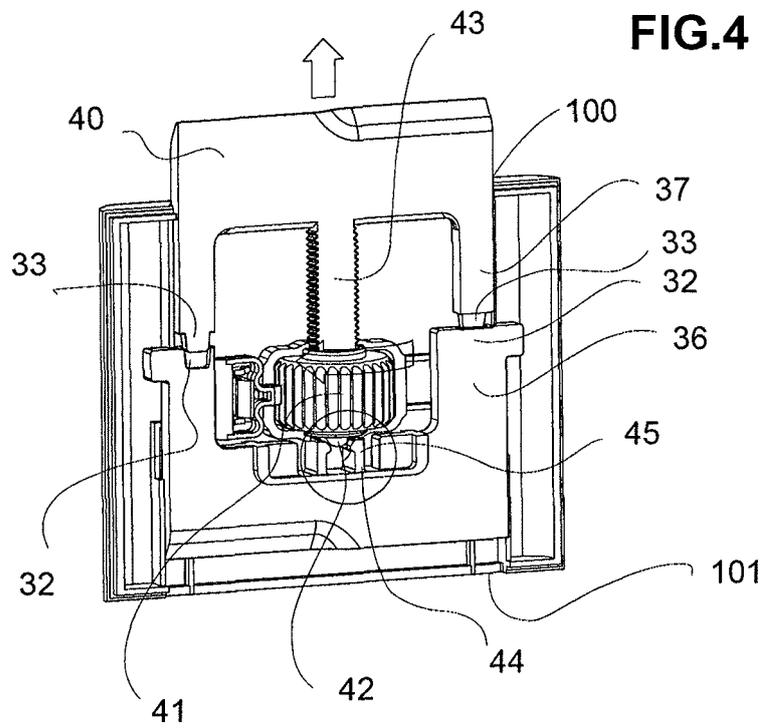
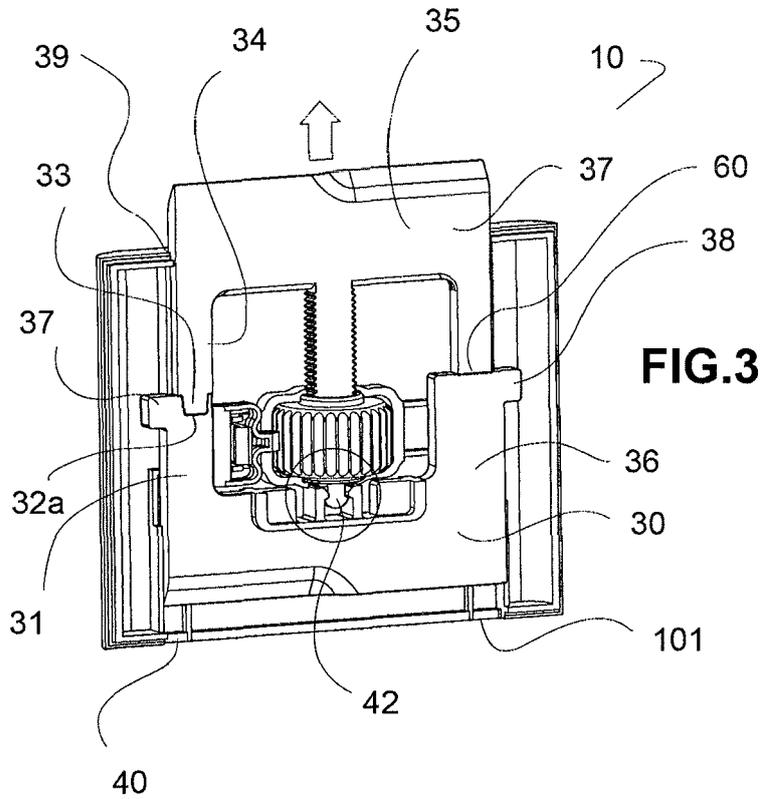


FIG. 2



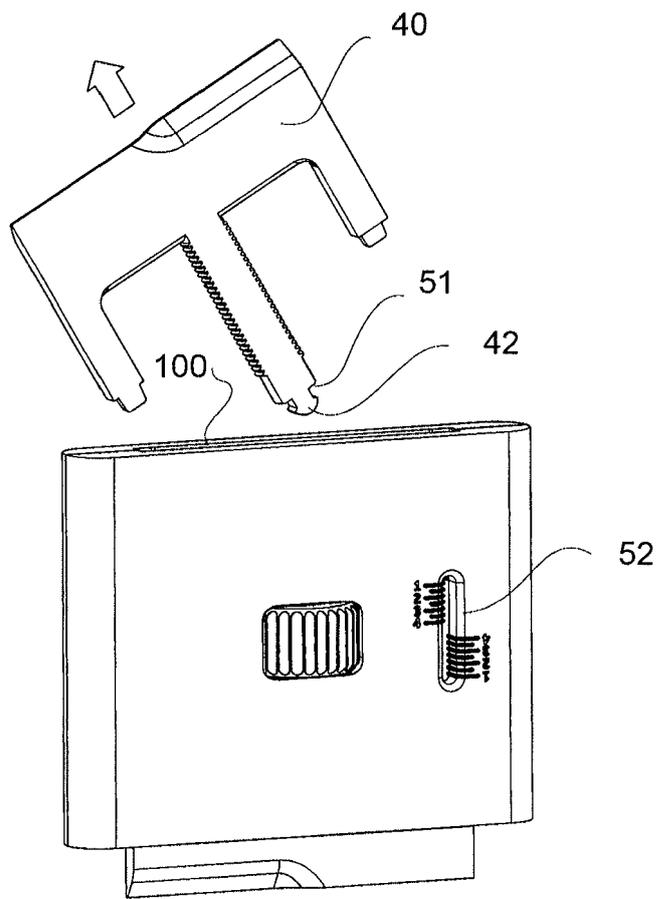
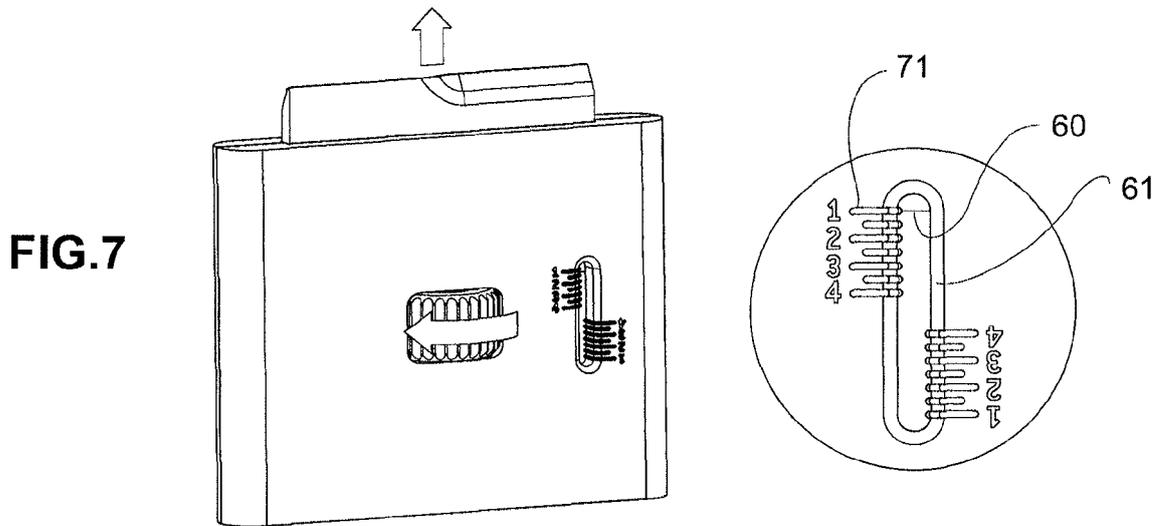
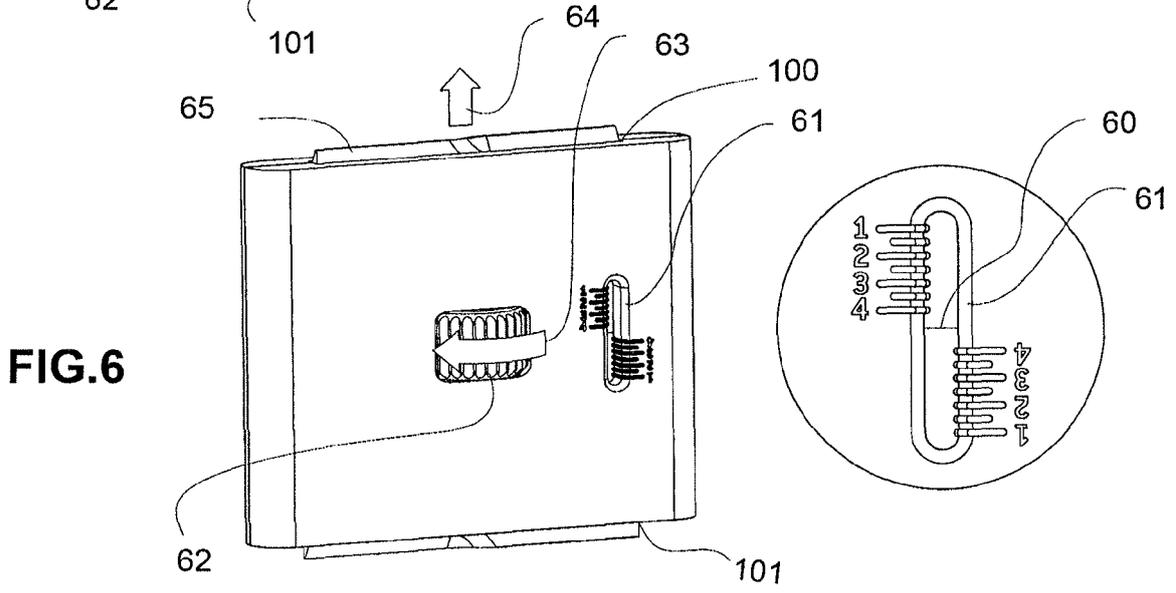
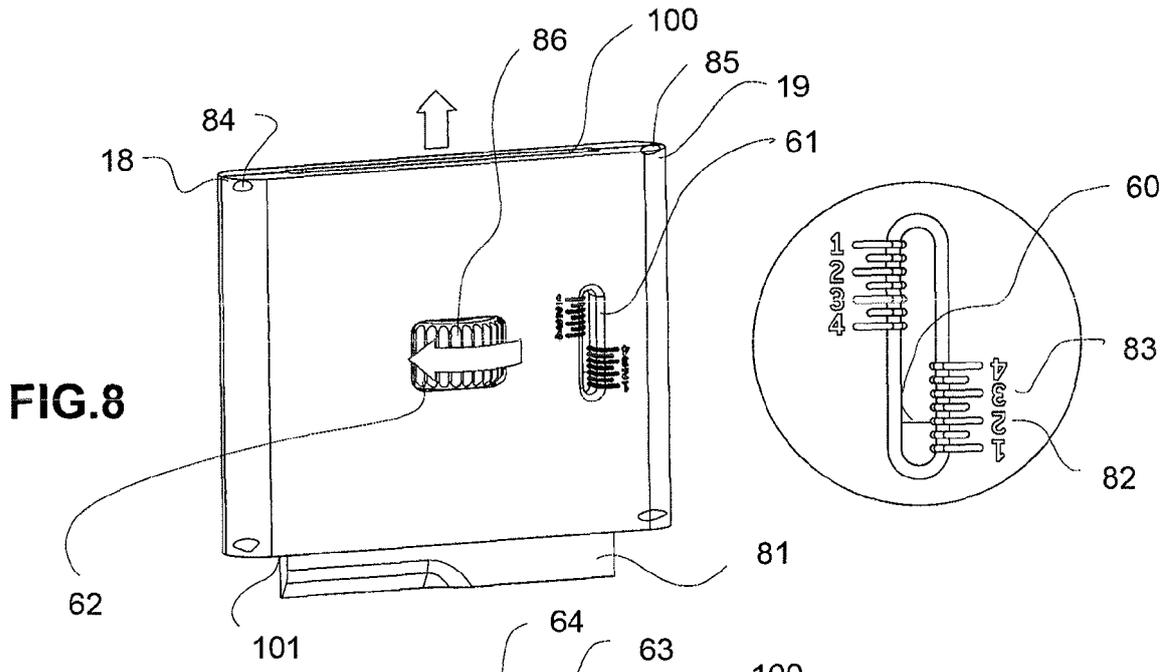
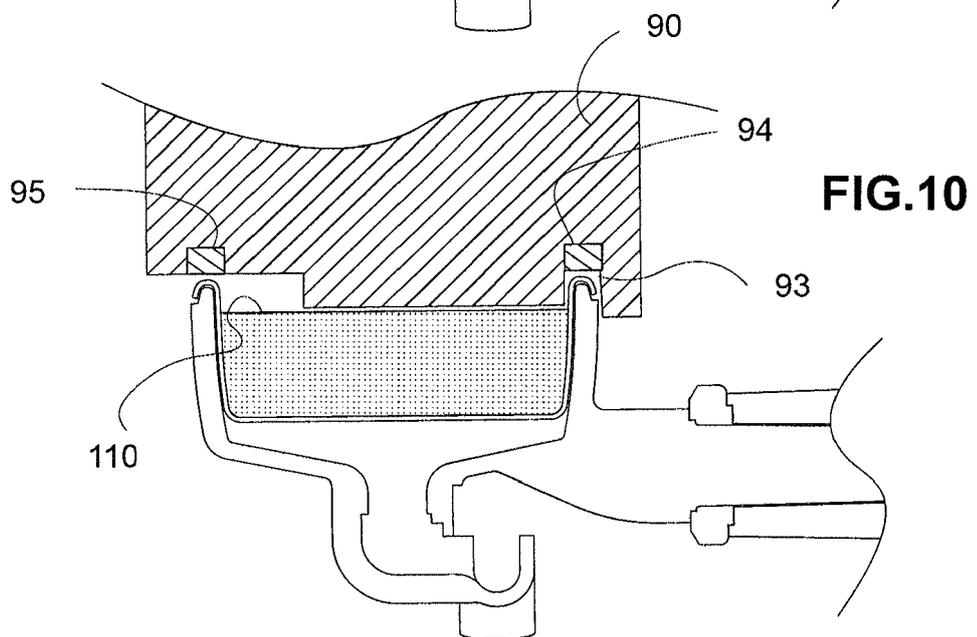
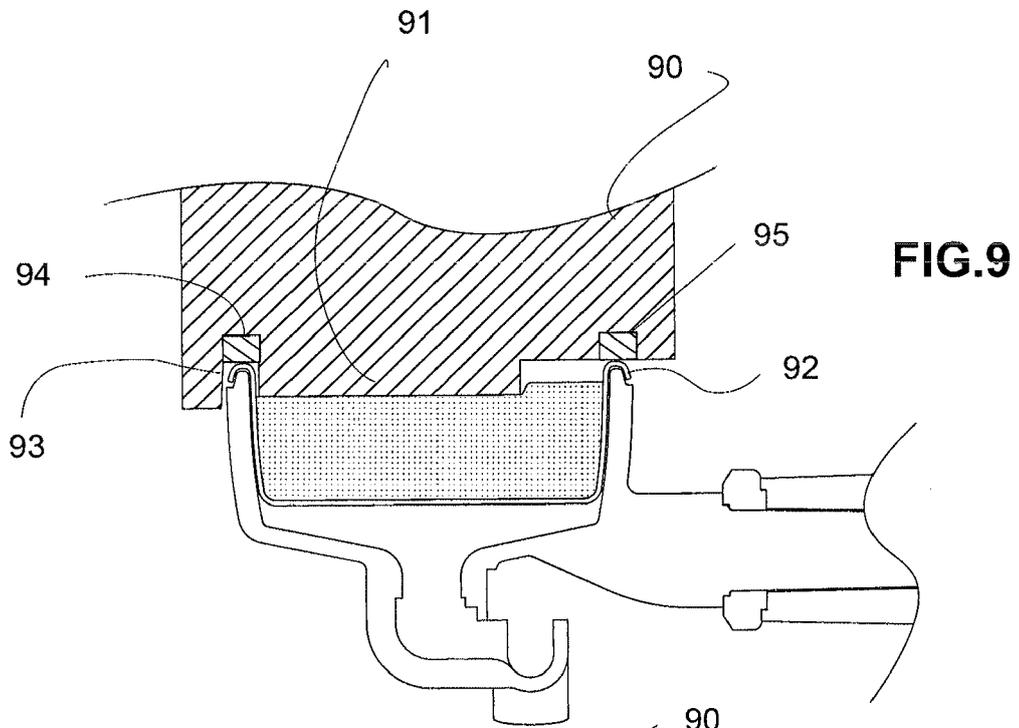


FIG.5





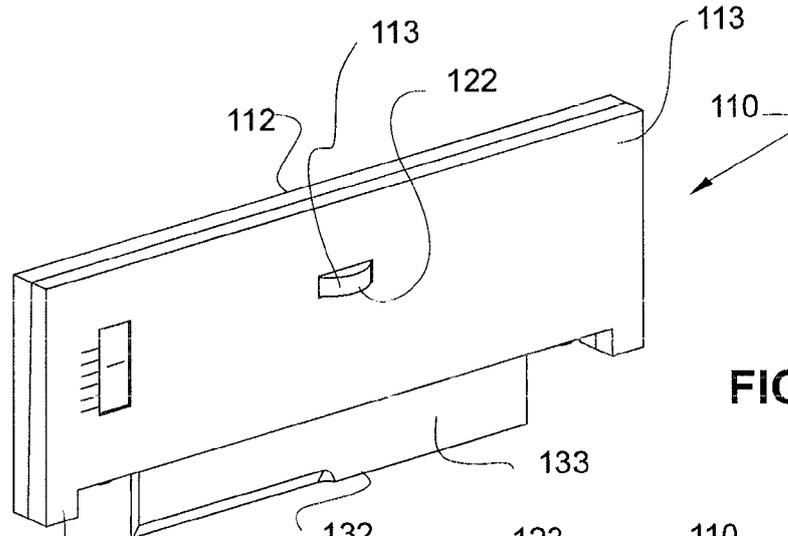


FIG. 11

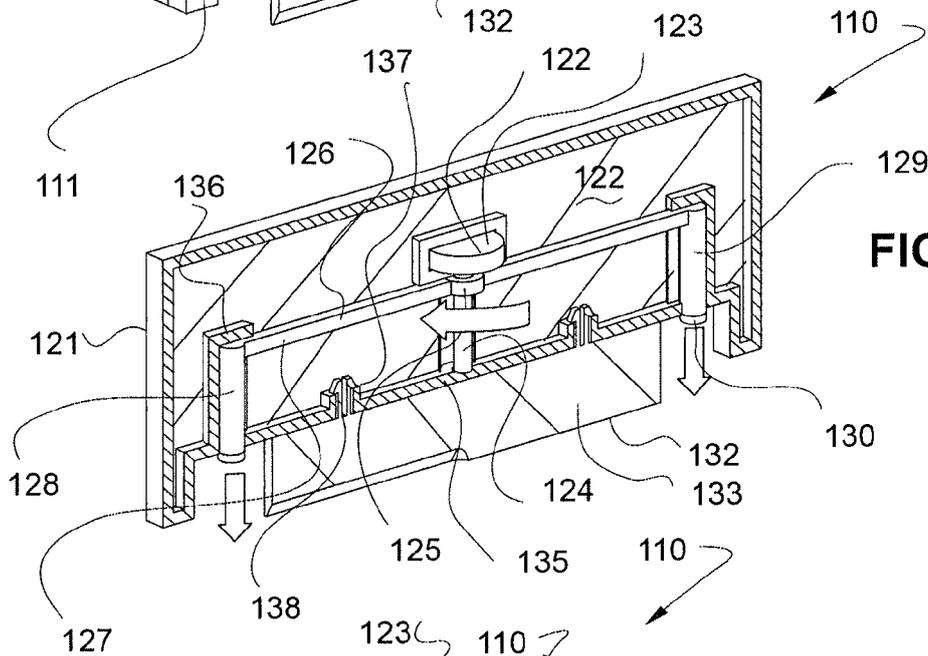


FIG. 12

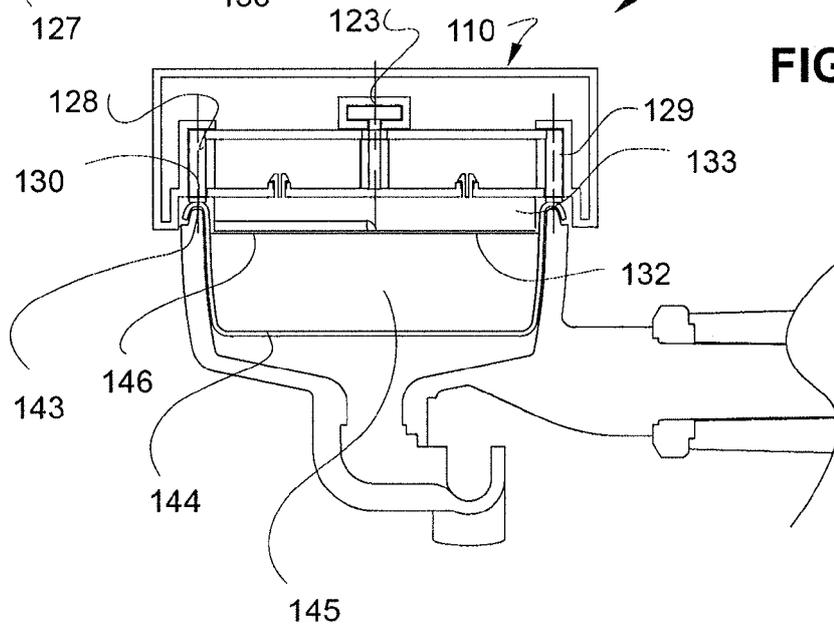


FIG. 13



EUROPEAN SEARCH REPORT

Application Number
EP 18 17 8158

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2008/067590 A1 (MCKNIGHT PHILIP LEWIS [AU]) 12 June 2008 (2008-06-12) * figures 1-4 * -----	1-6	INV. A47J31/44 A47J31/40 A47J31/06
A	US 6 095 032 A (BARNETT MARK L [US] ET AL) 1 August 2000 (2000-08-01) * column 7, line 62 - column 8, line 6; figures 1-6 * -----	1-6	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47J
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 17 July 2018	Examiner Fritsch, Klaus
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 18 17 8158

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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17-07-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008067590 A1	12-06-2008	AT 499025 T	15-03-2011
		AU 2007329170 A1	12-06-2008
		EP 2094135 A1	02-09-2009
		US 2010050881 A1	04-03-2010
		WO 2008067590 A1	12-06-2008

US 6095032 A	01-08-2000	AT 230237 T	15-01-2003
		AU 1520600 A	29-05-2000
		DE 69904745 D1	06-02-2003
		DE 69904745 T2	08-10-2009
		DK 1126774 T3	05-05-2003
		EP 1126774 A1	29-08-2001
		ES 2190273 T3	16-07-2003
		JP 4199932 B2	24-12-2008
		JP 2002529130 A	10-09-2002
		US 6095032 A	01-08-2000
		WO 0027262 A1	18-05-2000
